Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in this application.

1. (Cancelled)

2. (amended) ~~The control program product of claim 1~~ A control program product comprising an instruction set including a first field for describing an execution instruction for designating content of an operation or data processing that is executed in at least one processing unit forming a data processing system, and a second field for describing preparation information for setting the processing unit to a state that is ready to execute the operation or data processing that is executed according to the execution instruction, the preparation information in the second field is for the operation or data processing being independent of the content of the execution instruction described in the first field of the instruction set, wherein the preparation information for the execution instruction described in the first field of a subsequent instruction set is described in the second field.

3. (amended) The control program product of claim ~~1~~ 2, wherein the preparation information includes information for designating an input and/or output interface of the processing unit independently of execution timing of the processing unit.

4. (amended) The control program product of claim ~~1~~ 2, wherein the preparation information includes information for designating content of processing of the processing unit.

5. (amended) The control program product of claim ~~1~~ 2, wherein the data processing system includes a plurality of the processing units, and the preparation information includes information for designating a combination of data paths by the processing units.

6. (amended) The control program product of to claim ~~1~~ 2, wherein the processing unit includes a specific internal data path, and the preparation information includes information for selecting a part of the internal data path.

7. (amended) The control program product of claim ~~1~~ 2, wherein the preparation information includes information for designating input/output interfaces in a processing block formed from a plurality of the processing units.

8. (previously presented) The program product of claim 7, wherein the data processing system includes a memory storing a plurality of configuration data defining the input and/or output interfaces in the processing block, and

the preparation information includes information for selecting one of the plurality of configuration data stored in the memory for changing the input and/or output interfaces in the processing block.

9. (amended) ~~The control program product of claim 1~~ A control program product comprising an instruction set including a first field for describing an execution instruction for designating content of an operation or data processing that is executed in at least one processing unit forming a data processing system, and a second field for describing preparation information for setting the processing unit to a state that is ready to execute the operation or data processing that is executed according to the execution instruction, the preparation information in the second field is for the operation or data processing being independent of the content of the execution instruction described in the first field of the instruction set, wherein the data processing system has a first control unit including an arithmetic/logic unit as the processing unit, and a second control unit including as the processing units a plurality of data flow processing units including a specific internal data path, and

the control program product includes the instruction set in which the execution instruction for operating the arithmetic/logic unit is described in the first field, and the preparation information designating interfaces of the arithmetic/logic unit and/or the data flow processing units is described in the second field.

10. (previously presented) The control program product of claim 9, wherein the preparation information includes information for designating a combination of data paths by the data flow processing units.

11. (previously presented) The control program product of claim 9, wherein the preparation information includes information for selecting a part of the internal data path.

12. (amended) The control program product of claim ~~1~~ 9, wherein an instruction designating input/output between a register or buffer and a memory is described in the second field.

13. (amended) The control program product of claim ~~1~~ 9, wherein a plurality of the execution instructions and/or the preparation information are described in the first and/or second field respectively.

14. (currently amended) A recording medium recording thereon a control program comprising an instruction set including:

a first field for describing an execution instruction for designating content of an operation or data processing that is executed in at least one processing unit forming a data processing system;~~, and~~

a second field for describing preparation information for setting the processing unit to a state that is ready to execute the operation or data processing that is executed according to the execution instruction, the preparation information in the second field ~~is~~ being for the operation or data processing that is ~~being~~ independent of the content of the execution instruction described in the first field of the instruction set; and

a third field for indicating, independently of the first field, valid/invalid of the second field and a type of the preparation information.

15. (currently amended) A transmission medium having embedded therein a control program comprising an instruction set including;

a first field for describing an execution instruction for designating content of an operation or data processing that is executed in at least one processing unit forming a data processing system;~~, and~~

a second field for describing preparation information for setting the processing unit to a state that is ready to execute the operation or data processing that is executed according to the execution instruction, the preparation information in the second field ~~is~~ being for the operation or data processing ~~being~~ that is independent

of the contents of the execution instruction described in the first field of the instruction set.; and

a third field for indicating, independently of the first field, valid/invalid of the second field and a type of the preparation information.

16. (previously presented) A data processing system, comprising:

at least one processing unit for executing an operation or data processing;

a unit for fetching an instruction set including a first field for describing an execution instruction for designating content of the operation or data processing that is executed in the processing unit, and a second field for describing preparation information for setting the processing unit to a state that is ready to execute the operation or data processing that is executed according to the execution instruction;

a first execution control unit for decoding the execution instruction in the first field and proceeding with the operation or data processing by the processing unit that is preset so as to be ready to execute the operation or data processing of the execution instruction; and

a second execution control unit for decoding the preparation information in the second field and, independently of content of the proceeding of the first execution control unit, setting a state of the processing unit so as to be ready to execute an operation or data processing.

17. (previously presented) The data processing system of claim 16, wherein the first or second execution control unit includes a plurality of execution control portions for independently processing a plurality of independent execution instructions or preparation information that are described in the first or second field respectively.

18. (previously presented) The data processing system of claim 16, wherein the second execution control unit sets an input and/or output interface of the processing unit independently of execution timing of the processing unit.

19. (previously presented) The data processing system of claim 16, wherein the second execution control unit defines content of processing of the processing unit.

20. (previously presented) The data processing system of claim 16, comprising a plurality of the processing units, wherein the second execution control unit controls a combination of data paths by the processing units.

21. (previously presented) The data processing system of claim 16, wherein the processing unit includes a specific internal data path.

22. (previously presented) The data processing system of claim 16, wherein the processing unit includes at least one logic gate and an internal data path connecting the logic gate with an input/output interface.

23. (previously presented) The data processing system of claim 21, wherein the second execution control unit selects a part of the internal data path of the processing unit according to the preparation information.

24. (previously presented) The data processing system of claim 16, wherein the second execution control unit changes input and/or output interfaces in a processing block formed from a plurality of the processing units, according to the preparation information.

25. (previously presented) The data processing system of claim 24, comprising a memory storing a plurality of configuration data defining the input and/or output interfaces in the processing block, wherein the second execution control unit changes the input and/or output interfaces in the processing block by selecting one of the plurality of configuration data stored in the memory according to the preparation information.

26. (previously presented) The data processing system of claim 16, wherein the second execution control unit has a function as a scheduler for managing an interface of the processing unit.

27. (previously presented) The data processing system of claim 16, further comprising a first control unit including an arithmetic/logic unit as the processing unit, and a second control unit having as the processing units a plurality of data flow processing units including a specific data path, wherein

the first execution control unit operates the arithmetic/logic unit, and

the second execution control unit sets interfaces of the arithmetic/logic unit and/or the data flow processing units.

28. (previously presented) The data processing system of claim 27, wherein the second execution control unit controls a combination of data paths by the data flow processing units.

29. (previously presented) The data processing system of claim 27, wherein the data flow processing unit has a specific internal data path, and the second execution control unit selects a part of the internal data path of the data flow processing unit according to the preparation information.

30. (previously presented) The data processing system of claim 16, wherein the second execution control unit has a function to control input/output between a register or buffer and a memory.

31. (previously presented) A method for controlling a data processing system including at least one processing unit for executing an operation or data processing comprising:

a step of fetching an instruction set including a first field for describing an execution instruction for designating content of the operation or data processing that is executed in the processing unit, and a second field for describing preparation information for setting the processing unit to a state that is ready to execute the operation or data processing that is executed according to the execution instruction;

a first control step of decoding the execution instruction in the first field and proceeding with the operation or data processing by the processing unit that is preset so as to be ready to execute the operation or data processing of the execution instruction; and

a second control step of decoding independently of the first control step, the preparation information in the second field and setting a state of the processing unit so as to be ready to execute the operation or data processing.

32. (previously presented) The method of claim 31, wherein in the second control step, an input and/or output interface of the processing unit is set independently of execution timing of the processing unit.

33. (previously presented) The method of claim 31, wherein in the second control step, content of processing of the processing unit is defined.

34. (previously presented) The method of claim 31, wherein the data processing system includes a plurality of the processing units, and in the second control step, a combination of data paths by the processing units is controlled.

35. (previously presented) The method of claim 31, wherein the processing unit has a specific internal data path, and in the second control step, a part of the internal data path of the processing unit is selected.

36. (previously presented) The method of claim 31, wherein in the second control step, input and/or output interfaces in a processing block formed from a plurality of the processing units is changed.

37. (currently amended) The method of claim 31, wherein the data processing system includes a memory storing a plurality of configuration data defining the input and/or output interfaces in the processing block, and

in the second ~~execution~~ control step, the input and/or output interfaces in the processing block are changed by selecting one of the plurality of configuration data stored in the memory.

38. (previously presented) The method of claim 31, wherein in the second control step, a schedule retaining an interface of the processing unit is managed.

39. (previously presented) The method of claim 31, wherein in the second control step, input/output between a register or buffer and a memory is controlled.

40. (new) The control program product of claim 2, wherein an instruction designating input/output between a register or buffer and a memory is described in the second field.

41. (new) The control program product of claim 2, wherein a plurality of the execution instructions and/or the preparation information are described in the first and/or second field respectively.

42. (new) A control program product comprising an instruction set including:

a first field for describing an execution instruction for designating content of an operation or data processing that is executed in at least one processing unit forming a data processing system;

a second field for describing preparation information for setting the processing unit to a state that is ready to execute the operation or data processing that is executed according to the execution instruction, the preparation information in the second field being for the operation or data processing that is independent of the content of the execution instruction described in the first field of the instruction set; and

a third field for indicating independently of the first field, valid/invalid of the second field and a type of the preparation information.

43. (new) The control program product of claim 42, wherein the preparation information for the execution instruction described in the first field of a subsequent instruction set is described in the second field.

44. (new) The control program product of claim 42, wherein the preparation information includes information for designating an input and/or output interface of the processing unit independently of execution timing of the processing unit.

45. (new) The control program product of claim 42, wherein the preparation information includes information for designating content of processing of the processing unit.

46. (new) The control program product of claim 42, wherein the data processing system includes a plurality of the processing units, and the preparation information includes information for designating a combination of data paths by the processing units.

47. (new) The control program product of to claim 42, wherein the processing unit includes a specific internal data path, and the preparation information includes information for selecting a part of the internal data path.

48. (new) The control program product of claim 42, wherein the preparation information includes information for designating input/output interfaces in a processing block formed from a plurality of the processing units.

49. (new) The program product of claim 48, wherein the data processing system includes a memory storing a plurality of configuration data defining the input and/or output interfaces in the processing block, and

the preparation information includes information for selecting one of the plurality of configuration data stored in the memory for changing the input and/or output interfaces in the processing block.

50. (new) The control program product of claim 42, wherein the data processing system has a first control unit including an arithmetic/logic unit as the processing unit, and a second control unit including as the processing units a plurality of data flow processing units including a specific internal data path, and

the control program product includes the instruction set in which the execution instruction for operating the arithmetic/logic unit is described in the first field, and the preparation information designating interfaces of the arithmetic/logic unit and/or the data flow processing units is described in the second field.

51. (new) The control program product of claim 50, wherein the preparation information includes information for designating a combination of data paths by the data flow processing units.

52. (new) The control program product of claim 50, wherein the preparation information includes information for selecting a part of the internal data path.

53. (new) The control program product of claim 42, wherein an instruction designating input/output between a register or buffer and a memory is described in the second field.

54. (new) The control program product of claim 42, wherein a plurality of the execution instructions and/or the preparation information are described in the first and/or second field respectively.

55. (new) A data processing system, comprising:

at least one processing unit for executing an operation or data processing;

a unit for fetching an instruction set including a first field for describing an execution instruction for designating content of the operation or data processing that is executed in the processing unit, a second field for describing preparation information for setting the processing unit to a state that is ready to execute the operation or data processing that is executed according to the execution instruction, and a third field for indicating, independently of the first field, valid/invalid of the second field and a type of the preparation information;

a first execution control unit for decoding the execution instruction in the first field and proceeding with the operation or data processing by the processing unit that is preset so as to be ready to execute the operation or data processing of the execution instruction; and

a second execution control unit for decoding the preparation information in the second field based on information in the third field and, independently of content of the proceeding of the first execution control unit, setting a state of the processing unit so as to be ready to execute an operation or data processing.

56. (new) A method for controlling a data processing system including at least one processing unit for executing an operation or data processing, comprising:

a step of fetching an instruction set including a first field for describing an execution instruction for designating content of the operation or data processing that is executed in the processing unit, a second field for describing preparation information for setting the processing unit to a state that is ready to execute the operation or data processing that is executed according to the execution instruction, and a third field for indicating, independently of the first field, valid/invalid of the second field and a type of the preparation information;

a first control step of decoding the execution instruction in the first field and proceeding with the operation or data processing by the processing unit that is preset so as to be ready to execute the operation or data processing of the execution instruction; and

a second control step of decoding, independently of the first control step, the preparation information in the second field based on information in the third field and setting a state of the processing unit so as to be ready to execute the operation or data processing.